

bath containing a residual etchant including a diluted etchant and residue material after the glass substrate is etched with the first etchant to uniformly reduce a thickness of the glass substrate; a second tank for receiving the residual etchant from the etch bath and separating the diluted etchant from the residue material;

(3)
out

a connecting passage connecting the first and second tanks for transferring the separated diluted etchant from the second tank to the first tank; and

an outlet pipe attached to the second tank for discharging the residue material.

10. (Twice Amended) An etching apparatus for etching a glass substrate with an etchant, comprising:

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an etch bath adapted to receive the substrate immersed in[to] the etchant for etching the glass substrate to uniformly reduce a thickness of the glass substrate;

a temperature sensor installed in the etch bath for monitoring a temperature of the etchant while the glass substrate is etched in the etch bath; and

a control unit for receiving a signal indicating the temperature of the etchant from the temperature sensor and transmitting an etching termination signal to the etch bath when the temperature reaches a target temperature.

11. (Twice Amended) An etching apparatus for etching a glass substrate comprising:

a first tank including a first etchant;

an etch bath for immersing said glass substrate in said first etchant, said etch bath having a bubble plate, the etch bath being connected to the first tank for receiving the first etchant and adapted

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to etch the substrate with the first etchant to uniformly reduce a thickness of the glass substrate, the etch both producing a residual etchant including a diluted etchant and residue material as a result of etching the substrate;

a separation tank adapted to receive the residual etchant from the etch bath for separating the diluted etchant from the residue material, the separation tank transferring the separated diluted etchant to the first tank;

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a rinse bath for cleaning the glass substrate that is etched in the etch bath;

a dry bath for drying the glass substrate that is rinsed at the rinse bath;

a solvent supply source for supplying solvent water to the first tank;

an etching solution source for supplying an etching solution to the first tank; and

a control unit for controlling the etch bath, the rinse bath, the dry bath, the first tank, and the separation tank.

REMARKS

In the Office Action dated April 6, 2000, the Examiner rejected claims 1 and 19 - 20 under 35 U.S.C. § 102(b) as being anticipated by Nelson, rejected claims 2, 7, and 10 under 35 U.S.C. § 103(a) as being unpatentable over Nelson in view of Tittle, and rejected claims 3 - 6, 8 - 9, and 11 - 18 under 35 U.S.C. § 103(a) as being unpatentable over Nelson in view of Jones et al., and Tittle.

By this Amendment, Applicants amend claims 1, 10, and 11. Accordingly, claims 1 - 20 are pending in this application. Applicants have amended the claims to more clearly recite the subject matter of the present invention and respectfully submit that the claims as amended are allowable.